Feb. 2, 1943. H. C. PORTER ET AL 2,309,785

CLOSURE CONSTRUCTION

Filed Dec. 24, 1940

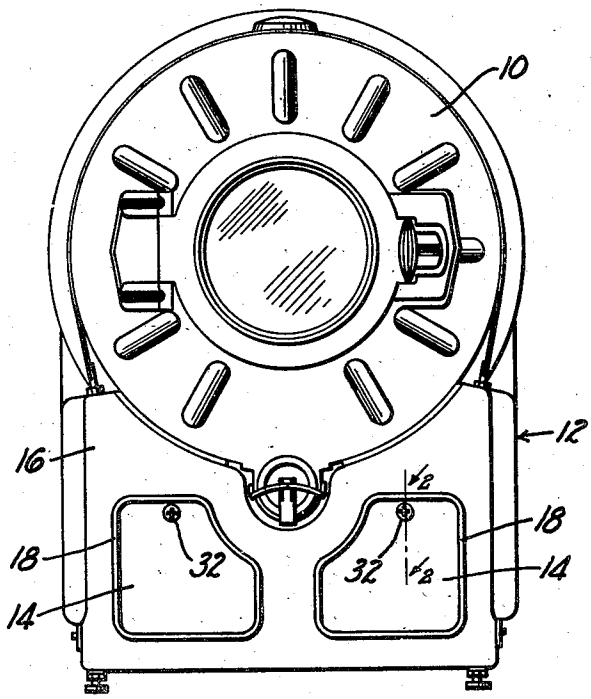


FIG. 1

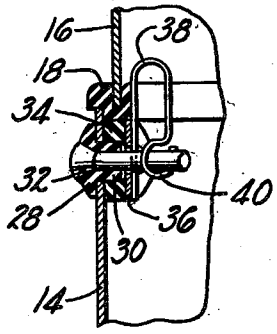


FIG. 2

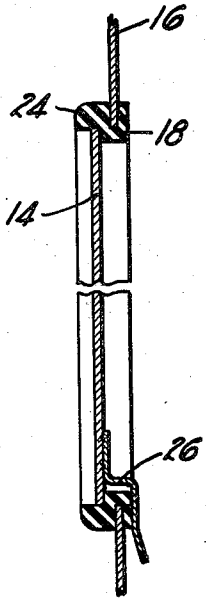


FIG. 3

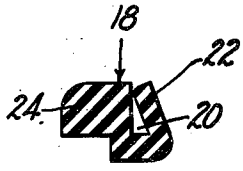


FIG. 4

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CLOSURE CONSTRUCTION

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4 Claims. (Cl. 292—202)

This invention relates to closure constructions and is illustrated as embodied in a service door closure for a cleaning machine.

One of the objects of the invention is to provide a closure construction including an extremely simple yet highly efficient latch mechanism for holding the closure in place. According to one feature of the invention the latch mechanism is so constructed that no moving parts contact the closure or the wall member into which it fits so that the possibility of marring or chipping the finish thereon is eliminated.

Another object of the invention is to provide a novel seal construction for a closure by which the closure is sealed against a wall into which it fits.

Still another object of the invention is to provide a construction in which a part stamped out of the wall may be utilized as a closure for the wall. This results in a great saving in material and eliminates the labor necessary to form a separate closure.

The above and other objects, advantages and novel features of the invention will be apparent from the following description of the accompanying drawing, in which:

Figure 1 is a front elevation of a cleaning machine embodying the invention;

Figure 2 is an enlarged section through the closure latch construction, taken at a 45° angle from the rear, on the line 2—2 of Figure 1;

Figure 3 is a similar section showing the manner of fastening the closure in the wall opening; and

Figure 4 is an enlarged section of a sealing strip.

The machine illustrated in Figure 1 comprises a tub 10 supported on a closed base 12 in which is mounted operating mechanism for cleaning means in the tub. The operating mechanism may take the form of that more particularly described and claimed in the patent to Dodge No. 2,173,603.

It sometimes becomes necessary to make adjustments or repairs to the operating mechanism and for that purpose there is provided, according to the present invention, a pair of service openings closed by plates 14 arranged in the front of the base 12. It will, of course, be apparent that any desired number of such openings located at various points in the machine could be provided as necessary.

As best seen in Figures 2 and 3, the base 12 includes a front sheet metal plate 16 from which the service openings are cut or punched. According to one feature of the invention the closure plates 14 are formed by the parts punched out of the plate or panel 16 and are of the same size and shape as the openings in the panel.

The plates 14 are supported by sealing strips, indicated generally at 18, extending completely around the openings in the panel 16. As shown in Figure 4, the sealing strips 18 are formed with a groove 20 to receive the edge of the panel 16 around the opening. The groove 20 is defined by flanged sides, one of which 22 is normally biased toward the other so that the groove converges outwardly. The opposite side of the groove carries a projecting flange 24 forming a ledge or shelf around the opening of substantially the same size and shape as the opening.

In placing the strip on the panel, the edge of the panel around the opening is forced into the groove 20 so that the sides of the groove squeeze against and grip the panel tightly. This is particularly important in bending the strip around curved edges of the opening since it insures that when the strip is bent the sides of the groove will be biased inwardly to grip the panel tightly. With this construction the strip engages the panel securely and no additional fastening means in required.

The plate 14 rests within the flange 24 of the sealing strip with its edge engaging the flange and its inner surface lying against a portion of the sealing strip which projects within the opening. Thus the sealing strip supports and provides a sealing surface for engaging the closure plate.

The plate is held in place by one or more sheet metal brackets 26 welded or otherwise secured to the plate 14 and offset therefrom to fit over the inner side of the sealing strip. One or more such brackets are provided, preferably at the lower edge portion of the plate in engagement with the sealing strip.

Opposite the brackets 26 a latch is provided for removably holding the upper portion of the plate 14 in engagement with the sealing strip. As shown in Figure 2, the latch is formed by a grommet 28 of fiber or the like passing through an opening in the plate and having a cylindrical portion 30 projecting on the inside of the plate. A rotatable pin 32 fits through the grommet and projects beyond it on the inside of the plate. The pin 32 preferably has a screw head adapted to receive a screw driver by which the pin may be turned. On the inside of the plate a rubber washer or collar 34 surrounds the grommet portion 30 and normally projects slightly beyond it. A metal washer 36 overlies the inner surface of

the collar 34 and is held in place by a wire 38 passing through a transverse opening in the pin 32. The wire 38 extends beyond the edge of the plate 14 and is then bent back upon itself and terminates in a ring portion 40 adapted to fit over the end of the pin 32. This holds the wire from sliding out of the pin and insures that it will remain in the desired position with respect to the pin.

In assembling the latch as above described, the rubber collar 34 is placed under compression so that it will grip the grommet portion 30 and will also frictionally grip the inner surface of the closure plate 14. Thus this collar holds the grommet against turning in the plate and insures that paint or other finish on the plate will not be marred or scratched by turning of the grommet. When the pin 32 is turned the wire 38 will slide over the washer 36 and may be moved to the latching position shown in Figure 2 in which the wire engages the inner surface of the sealing strip 18. At this time the closure plate 14 is latched in position. To remove the closure plate the pin 32 is turned through approximately 90° so that the projecting portion of the wire 38 will be out of register with the sealing strip 18. At this time the closure plate may be lifted out of the opening to provide access to the working parts within the base 12.

While the invention has been particularly described as applied to a cleaning machine it will be apparent that it is applicable to various other types of devices and it is not intended to limit the invention to cleaning machines, nor otherwise than by the terms of the appended claims.

What is claimed is:

1. A closure latch for use with a closure plate member adapted to fit an opening in a wall member, said latch comprising a latch on the plate and near an edge thereof and including a grommet extending through said plate, a pin extending rotatably through the grommet, a latch part carried by and extending laterally from the pin, and a collar of rubber or the like surrounding one end of the grommet and compressed between the latch part and the plate to grip the plate and grommet and hold them against relative turning and yieldingly to hold the latch part against turning.

2. A closure latch for use with a closure plate member adapted to fit an opening in a wall member, said latch comprising a grommet extending through said plate, a pin extending rotatably through the grommet and a wire extending diametrically through the pin and including a bent-back portion having a ring portion encircling the end of the pin.

3. In a closure construction including a relatively thin sheet member, a latch comprising a tubular grommet extending through the sheet member, a resilient collar surrounding the grommet and engaging one side of the sheet member, a washer overlying the collar and compressing the collar against the sheet member and the grommet, a pin rotatably extending through the grommet and washer, and a latch part carried by the pin and engaging the washer to hold it in place on the pin.

4. In a closure construction including a relatively thin sheet member, a latch comprising a tubular grommet extending through the sheet member, a resilient collar surrounding the grommet and engaging one side of the sheet member, a washer overlying the collar and compressing the collar against the sheet member and the grommet, a pin rotatably extending through the grommet and washer, and a wire extending diametrically through the pin and engaging the washer to hold it in place on the pin, said wire including a bent-back part terminating in a ring encircling the end of the pin.

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